**Brain Lab: Descriptions**

**Cerebral Cortex:** ability to learn and store information (see, ready, understand)

**Thalamus:** relay station for all information that travels to and from the cortex. All information from the eyes, ears and skin enters the thalamus and is then sent to appropriate areas in the cortex.

**Hypothalamus:** controls functions such as hunger, thirst, and sexual behavior and body temperature.

**Brain Stem:** ([medulla oblongata](http://en.wikipedia.org/wiki/Medulla_oblongata), [pons](http://en.wikipedia.org/wiki/Pons) and [midbrain](http://en.wikipedia.org/wiki/Midbrain) (mesencephalon). The brain stem provides the main motor and sensory innervation to the face and neck. The brain stem plays an important role in the regulation of cardiac and respiratory function. It also regulates the central nervous system, and is pivotal in maintaining consciousness and regulating the [sleep cycle](http://en.wikipedia.org/wiki/Sleep_cycle). The brain stem has many basic functions including heart rate, breathing, sleeping and eating.

**Hippocampus:** (part of the limbic system) Short and long term memory

**Amygdala:** (part of the limbic system) memory and emotional reactions, violent emotions like rage and violence.

**Medulla:** controls breathing and variety of reflexes.

**Cerebellum:** posture and balance.

**Pituitary Gland:** Body processes, blood pressure, thyroid gland, etc.

**Corpus Callosum:** band of fibers that connects the two hemispheres of the brain, carries messages to hemispheres.

### **Frontal Lobe:** organization, planning, and creative thinking.

**Parietal Lobe:** processes information from senses all over the body.

**Occipital Lobe:** processes visual signals.

**Temporal Lobe:** hearing, memory, emotion and speaking.

**Right Hemisphere:** controls movements on the right side of the body, visual and spatial relations (spatial is needed to put together a puzzle, navigate a familiar city)

**Left Hemisphere:** controls movements on the right side of the body, speech, mathematical ability, calculation, and logic.

Cell body: contains the nucleus and produces the energy needed to fuel neuron activity.

**Dendrites:** short, thin fibers that stick out from the cell body. Receive impulses, or messages from other neurons and send them to the cell body.

**Axon:** long fiber that carries the impulses away from the cell body toward the dendrites of another neuron. Can be very short to several feet in length.

**Direction of Nerve Impulse:**

Neurotransmitters can excite the next neuron or stop it from transmitting (inhibition). They are like valves in a water system that allow flow in only one direction. Many different kinds, some are involved in memory and learning or endorphins which inhibit pain. Over supply or undersupply of certain neurotransmitters have been linked to certain diseases, paralysis, Alzheimer’s.